

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A mixer design comprising: of
~~a pair of differential RF inputs connected to the source terminals of the a~~ first set
of ~~differential two~~ switches wherein source terminals of the first set of differential switches are
configured to couple to a differential RF input signal.
wherein drain terminals of the first set of differential switches whose
~~drains~~ are connected to ~~the~~ source terminals of ~~a the~~ second set of differential two
switches,
wherein drain terminals of the second set of differential switches comprise
~~whose drains are the mixer outputs;~~
~~the controlling gates wherein gate terminals~~ of the first set of differential
switches and the second set of differential switches are connected to ~~the differential~~ local
oscillator ~~differential~~ sources that are phase shifted from each other, and;
wherein each of the first and the second sets of differential switches
comprises ~~comprising~~ of a pair of complementary gate-controlled transistors in a
~~transmission gate configuration.~~
2. (Previously Presented) The mixer of claim 1 wherein there are three or more sets of
switches connected in series.
3. (Previously Presented) The mixer of claim 1 wherein the switches are based on FET
transistors.

4. (Previously Presented) The mixer of claim 1 wherein the switches are based on GaAs transistors.

5. (Previously Presented) The mixer of claim 1 wherein the switches are based on MOS transistors.

6. (Previously Presented) The mixer of claim 1 wherein the switches are single gate-controlled transistors.

7. (Currently Amended) The mixer of claim 1 wherein the gate terminals for the first set of differential switches ~~switch-gates~~ are connected to a differential ~~the~~ in-phase local oscillator signals and the gate terminals for the second set of differential switches ~~switch-gates~~ are connected to a differential ~~the~~ quadrature-phase local oscillator signals.

8. (Currently Amended) The mixer of claim 1 wherein the gate terminals for the first set of differential switches ~~switch-gates~~ are connected to a differential ~~the~~ quadrature-phase local oscillator signals and the second set of differential switches ~~switch-gates~~ are connected to ~~the a~~ a differential in-phase local oscillator signals.

9. (Currently Amended) The mixers of claims 1-8, wherein the mixer comprises a reversible mixer configuration, wherein the input and output terminal connections are reversible to be used to reverse the said mixer operations by reversing the inputs and outputs.

10-18. (Canceled)